DOCUMENT RESUME

ED 400 791 IR 018 145

AUTHOR Pallas, Abraham I.
TITLE Technology and the Three Stages of Teaching.
PUB DATE 96
NOTE 7p.; In: Proceedings of the Mid-South Instructional Technology Conference (1st, Murfreesboro, Tennessee, March 31-April 2, 1996); see IR 018 144.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Appropriate Technology; Curriculum Evaluation; Educational Media; *Educational Objectives; Educational Planning; Educational Strategies; *Educational Technology; Elementary Secondary Education; *Instructional Design; *Instructional Effectiveness; Relevance (Education); Teacher Background; Teachers; Teaching Experience; Technological Advancement
IDENTIFIERS *Technology Integration

ABSTRACT

The way in which teachers use technology in their instruction is often a function of their educational and technological background, their previous teaching experience, and the amount of attention the instructor pays to the goals of the course. The three stages of teaching elicit the following types of questions: (1) survival: "How can I survive the day/semester?" and "How can I cover all the material in the time allotted?"; (2) improving the basic curriculum and delivery methods: "How can I do what I am doing better?"; and (3) achieving specific results through technology use in the classroom: "What am I trying to accomplish?" Technology can be used at all levels of the cognitive and affective domains of learning, but it may not be the most effective approach. The best use of technology is determined by the curriculum and determining what needs to be accomplished. The paper discusses different interpretations of curriculum in relation to the use of technology. Faculty and administrators need to take the time to analyze curricula, assess learning goals, and determine the best way to achieve those goals, before spending money on technology. Reasons for and against using technology in a class should both be considered. (SWC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 400 791

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Technology and the Three Stages of Teaching

Abraham I. Pallas
Dean of Applied Sciences
Columbia State Community College
P.O. Box 1315
Columbia, TN 38402-1315

Abstract

The beginning teacher's question "How can I survive this semester?" becomes "How can I do what I am presently doing better?" It is at this stage that many instructors see technology fitting in as they take an existing curriculum and use different tools to teach the same things. There is a third question, however: "What am I really trying to do?" And it is this question that directs the excellent instructor to examine curricula with the goal of achieving specific results through technology use in instruction.

IR018145

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Lucinda T. Lea
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Technology and the Three Stages of Teaching

As technology becomes more and more pervasive in the educational environment, it is important to understand the position in which teachers find themselves as this technology is introduced. Technology is the "wave of the future" - except the future is now. According to Terry O'Banion, the "potential for creating real change [comes from] the application of information technology to the teaching equation" (O'Banion, 1994). The way in which teachers use technology in their instruction is often a function of their educational and technological background, together with their previous teaching experience. It also depends heavily on the amount of attention the instructor pays to the true goals of his or her course.

What are the Three Stages of Teaching?

The beginning teacher is typically overwhelmed by a teaching load of four or five classes, one or more preparations, and the responsibility of being wholly responsible for both content matter and student learning. Typical questions this new instructor asks are, "How can I survive this day?" , "How can I survive this semester?", and "How can I cover all this material in the time allotted?" The instructor at this stage typically has hand-me-down course curricula and outlines, perhaps even copies of tests given by others in the department. This instructor may modify some or all of these materials in the process of developing his or her own syllabi, but often does not have the luxury of examining the individual course in the context of the entire curriculum. Relying on the same methods used when he or she was a student, frequently one-way communication with a minimal amount of technology, the instructor may use technology in small ways. Bloom's taxonomy in the cognitive domain and Kratewohl's taxonomy in the affective domain are little contemplated, let alone consciously applied.

In general, it is not until the second or third semester of instruction that the instructor enters the second stage of teaching. At this point, some introspection occurs with the question, "How can I do what I am doing better?" Comfortable with the basic outline of what is being taught, he or she begins to start looking around for ways to improve the method of delivery. A speech teacher, for example, may use audio and/or video clips of Winston Churchill when discussing persuasive speaking. An art instructor may use a laser disc containing slides of different masterpieces in an art appreciation class. Of course, this laser disc may only be an improvement over the 35 mm slide cassette previously used; the instructional technology is merely supporting the same instructional goals that may have been popular for 20 or more years. Again the taxonomies are frequently ignored, though perhaps not as much as by the new instructor.

Unfortunately, many instructors remain at this second stage, improving their delivery of a curriculum not necessarily appropriate to the current student. Most instruction is still done by the lecture method, with students expected to work on assignments individually, but more and more the graduate is expected to collaborate with others in solving problems. And it is not only the instructors who fall into this trap, it is administrators as well. Elliot Eisner wrote,

> Consider for a moment school architecture and the design of school furniture. Most school rooms are designed as cubicles along corridors and have a kind of antiseptic quality to them. They tend to be repetitive and monotonous in the same way that some hospitals and factories are. They speak of efficiency more than they do of comfort...Schools are educational churches, and our gods, judging from the altars we build, are economy and efficiency. Hardly a nod is given to the spirit. (Eisner, 1979)

It is now that we need to look at the most important question, one which the excellent instructor asks: "What am I trying to accomplish?" It is only when this question is asked and answered that the role of technology in the classroom can take on true meaning, because it is within this framework that technology can be at its most effective. The taxonomies of Bloom and Kratewohl, in the cognitive and affective domains, respectively, need to be examined. Although technology can be used at all levels, it may not be the most effective approach.

As an initial example, Bloom's taxonomy begins with knowledge, defined as the remembering of previously learned material. This may be taught using technology, perhaps as a presentation of facts or via drill using a computer. Some of the earliest applications of technology in the classroom took place here, and many elementary classrooms still use computers for this purpose. But is this the best use of the technology? The answer to this question lies in the curriculum.

What is the Curriculum?

Curriculum has been defined as all the experiences offered to learners under the auspices or direction of the school. Under one interpretation of curriculum, there are five perspectives, all of which are valid when viewed with regard to technology. The first of these, the *ideal* curriculum, is that large body of knowledge as perceived by experts in the field. More and more of this information is becoming readily available to instructors via the internet, and faculty have great difficulty keeping up with all of it. Institutions make some decisions concerning which part of this body of knowledge they will provide to their students. The result of this decision, in a structured form, is the *formal* curriculum. At the next level, the faculty member determines which part of the formal curriculum is his or her responsibility; this is known as the *perceived* curriculum. Not everything identified in the perceived curriculum is taught; some things are excluded, other items not originally in the perceived curriculum are included. The result, what the instructor actually teaches, is the *operational* curriculum. Finally, what the student actually learns is not what the instructor actually teaches. What the student learns, which will be a function of many more things than just the classroom happenings, is the *experiential* curriculum.

Another interpretation, which overlays the above perspectives, is that the curriculum consists of three parts. The *explicit* curriculum is identified as what is consciously being taught. This includes course content, materials, knowledge, and applications. The *implicit* curriculum is that information which is conveyed to the students as part of the

classroom experience. This has major implications in the students' perception of their education. If an instructor insists on attendance and punctuality, legible papers and attentiveness in class, then the student perceives this as an important aspect of the course, and perhaps, the discipline. Also a part of this heading is the means by which an instructor delivers his or her material. If technology is not a part of the curriculum, either by explicit use by the instructor or by requirements for the student to use technology as part of his or her assignments, then the student may perceive that technology is not important in that field.

Just as important, and a major consideration as we attempt to put more and more content into a fixed time frame, is the third part of the curriculum. This is known as the *null* curriculum, which is that part of the body of knowledge which is consciously not taught. One of the major arguments by faculty against adding the use of technology to their courses is that there is insufficient time to incorporate technology together with everything else. The answer to this is, again, to ask and answer the question raised at the third stage of teaching, "What am I trying to do?"

Begin with the End in Mind

According to Stephen Covey, author of The Seven Habits of Highly Effective People and First Things First, the answer to the third stage question is "Begin with the end in mind" (Covey, 1989). What are the cognitive and affective goals being sought? What are the best ways of achieving these goals? In the cognitive domain, in increasing order of cognition are knowledge, comprehension, application, analysis, synthesis, and evaluation. Is the faculty member satisfied with mere knowledge or comprehension, or are application and analysis more desirous? The use of technology will depend on the answer. As an example, take an introductory electric circuits class. For a circuit with an alternating current power supply and reactive components, the circuit response will be a function of the frequency. Calculations in this type of circuit can be long and tedious, and if time is spent requiring students to perform calculations, little else is accomplished other than verifying that the student is capable of performing the calculations. If the goal is knowledge and comprehension, this instruction is appropriate and no additional technology is indicated. If, however, the goal is to analyze this same circuit, the use of a software package such as Pspice, which allows rapid calculation of voltages and currents, is indicated. The student can then be asked to vary parameters and determine the effect of such variance, thus appropriately using this as an analysis tool. A similar discussion can occur in the affective domain.

Implications and Conclusions

The significance of this discussion is that faculty and administrators need to be taking the time to analyze curricula, before spending money on technology. Unless there is a satisfactory answer to the question, "Why am I using this technology?", it should not be used. This does not, however, justify ignoring technology because it is more convenient not to explore its benefits in the classroom. The converse question, "Why am I not using technology?" should also be asked and answered. Faculty should be given the opportunity to carefully analyze their goals, and administrators should reward those who make

appropriate efforts to hone and justify their materials. Steven Kerr writes of the disincentive system common in universities, stating "Society *hopes* that teachers will not neglect their teaching responsibilities but *rewards* them almost entirely for research and publications" (Kerr, 1975).

We now have the capability of accessing extraordinary amounts of data, almost immediately as it is generated. Our challenge is no longer getting information, it is analyzing the information we get and determining which information we need. As Steven Eskow, founder and president of the Electronic University Network, has said, "Technology needs to be state of the mind, not state of the art." It is only when we realize this, and apply it in the classroom and across the curriculum, that technology will take its rightful place in education.

References

Covey, S. R. (1989). The Seven Habits of Highly Effective People. New York: Simon & Schuster.

Eisner, E. W. (1979). The Educational Imagination. New York: Macmillan.

Kerr, S. (1975). On the folly of rewarding A while hoping for B. Academy of Management Journal, 18(4), 769-783.

O'Banion, T. (1994). Sustaining innovation in teaching and learning. Leadership Abstracts, 7(4).